CLAIMS

1. An isolated nucleic acid molecule comprising a polynucleotide selected from the group consisting of:

(a) a polynucleotide encoding amino acids from about 1 to about 254 of SEQ ID NO:2;

(b) a polynucleotide encoding amino acids from about 2 to about 254 of SEQ ID NO:2;

(c) a polynucleotide encoding amino acids from about 1 to about 218 of SEQ ID NO:4;

(d) a polynucleotide encoding amino acids from about 2 to about 218 of SEQ ID NO:4;

(e) a polynucleotide encoding amino acids from about 1 to about 297 of SEQ ID NO:6;

(f) a polynucleotide encoding amino acids from about 2 to about 297 of SEQ ID NO:6;

(g) a polynucleotide encoding amino acids from about 1 to about 513 of SEQ ID NO:9;

(h) a polynucleotide encoding amino acids from about 2 to about 513 of SEQ ID NO:9;

(i) a polynucleotide consisting of SEQ ID NO:7;

(j) the polynucleotide complement of the polynucleotide of any one of (a) through (i); and

(k) a polynucleotide at least 90% identical to the polynucleotide of any one of (a) through (j).

2. An isolated nucleic acid molecule comprising about 762 contiguous nucleotides from the coding region of SEQ ID NO:1, about 545 contiguous nucleotides from the

coding region of SEQ ID NO:3, about 891 contiguous nucleotides from the coding region of SEQ ID NO:5, or about 1539 contiguous nucleotides from the coding region of SEQ ID NO:8.

3. An isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide wherein, except for at least one conservative amino acid substitution, said polypeptide has an amino acid sequence selected from the group consisting of:

(a) amino acids from about 1 to about 254 of SEQ ID NO:2;

(b) amino acids from about 2 to about 254 of SEQ ID NO:2;

(c) amino acids from about 1 to about 218 of SEQ ID NO:4;

(d) amino acids from about 2 to about 218 of SEQ ID NO:4;

(e) amino acids from about 1 to about 297 of SEQ ID NO:6;

(f) amino acids from about 2 to about 297 of SEQ ID NO:6;

(g) amino acids from about 1 to about 513 of SEQ ID NO:9;

(h) amino acids from about 2 to about 513 of SEQ ID NO:9.

4. The isolated nucleic acid molecule of claim 1, which is DNA.

5. A method of making a recombinant vector comprising inserting a nucleic acid molecule of claim 1 into a vector in operable linkage to a promoter.

6. A recombinant vector produced by the method of claim 5.

7. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 6 into a host cell.

8. A recombinant host cell produced by the method of claim 7.

9. A recombinant method of producing a polypeptide, comprising culturing the recombinant host cell of claim 8 under conditions such that said polypeptide is expressed and recovering said polypeptide.

10. An isolated polypeptide comprising amino acids at least 95% identical to amino acids selected from the group consisting of:

(a) amino acids from about 1 to about 254 of SEQ ID NO:2;

(b) amino acids from about 2 to about 254 of SEQ ID NO:2;

(c) amino acids from about 1 to about 218 of SEQ ID NO:4;

(d) amino acids from about 2 to about 218 of SEQ ID NO:4;

(e) amino acids from about 1 to about 297 of SEQ ID NO:6;

(f) amino acids from about 2 to about 297 of SEQ ID NO:6;

(g) amino acids from about 1 to about 513 of SEQ ID NO:9;

(h) amino acids from about 2 to about 513 of SEQ ID NO:9.

11. An isolated polypeptide wherein, except for at least one conservative amino acid substitution, said polypeptide has an amino acid sequence selected from the group consisting of:

(a) amino acids from about 1 to about 254 of SEQ ID NO:2;

(b) amino acids from about 2 to about 254 of SEQ ID NO:2;

(c) amino acids from about 1 to about 218 of SEQ ID NO:4;

(d) amino acids from about 2 to about 218 of SEQ ID NO:4;

(e) amino acids from about 1 to about 297 of SEQ ID NO:6;

(f) amino acids from about 2 to about 297 of SEQ ID NO:6;

(g) amino acids from about 1 to about 513 of SEQ ID NO:9;

(h) amino acids from about 2 to about 513 of SEQ ID NO:9.

12. An isolated polypeptide comprising amino selected from the group consisting of:

(a) amino acids from about 1 to about 254 of SEQ ID NO:2;

(b) amino acids from about 2 to about 254 of SEQ ID NO:2;

(c) amino acids from about 1 to about 218 of SEQ ID NO:4;

(d) amino acids from about 2 to about 218 of SEQ ID NO:4;

(e) amino acids from about 1 to about 297 of SEQ ID NO:6;

(f) amino acids from about 2 to about 297of SEQ ID NO:6;

(g) amino acids from about 1 to about 513 of SEQ ID NO:9;

(h) amino acids from about 2 to about 513 of SEQ ID NO:9.

13. An epitope-bearing portion of a polypeptide selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, and SEQ ID NO:9.

14. The epitope-bearing portion of claim 13, which comprises between about 10 and 100 contiguous amino acids of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, or SEQ ID NO:9.

15. The epitope-bearing portion of claim 14, which comprises between about 12 and 50 contiguous amino acids of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, or SEQ ID NO:9.

16. The epitope-bearing portion of claim 14, which comprises between about 15 and 25 contiguous amino acids of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, or SEQ ID NO:9.

17. An isolated antibody that binds specifically to the polypeptide of claim 10.

18. An isolated antibody that binds specifically to the polypeptide of claim 11.

19. An isolated antibody that binds specifically to the polypeptide of claim 12.

20. A method for diagnosing a BBSR protein-modulated disorder using a biological sample from a human suspected of having said disorder, said method comprising :

a) providing an antibody that binds to the polypeptide of claim 10;

b) contacting the antibody with said sample under binding conditions to form a duplex; and

c) determining the amount of said duplex formed, compared to a normal sample.

21. A method for diagnosing a BBSR protein-modulated disorder in a biological sample from a human suspected of having said disorder, said method comprising:

a) providing a polynucleotide that binds to mRNA encoding the polypeptide of claim 10 under stringent conditions;

b) contacting nucleic acid of said sample with said polynucleotide under binding conditions to form a duplex; and

c) determining the amount of said duplex formed, compared to a normal sample.

22. A method for modulating the amount of a BBSR protein in a subject, said method comprising administering an effective amount of a composition selected from a group consisting of:

a) the polypeptide according to claim 10; and

b) an antibody that binds to the polypeptide according to claim 10.

23. A method for modulating the amount of a BBSR protein in a subject, said method comprising administering an effective amount of a composition consisting of the nucleotide sequence according to claim 1.

24. A method for treating a BBSR protein-modulated disorder in a subject, said method comprising administering to said subject an effective amount of a composition selected from a group consisting of:

a) the polypeptide according to claim 10; and

b) an antibody that binds to the polypeptide according to claim 10; wherein said composition further comprises a pharmaceutically acceptable carrier.

25. A method for treating a BBSR protein-modulated disorder in a subject, said method comprising administering to said subject an effective amount of a composition consisting of the nucleotide sequence according to claim 1, wherein said composition further comprises a pharmaceutically acceptable carrier.